



*nantes*

*saint-nazaire*

**HERE,**  
**THE ESTUARY'S**  
**ENERGY GIVES**  
**YOU WINGS**

# WELCOME TO THE LAND OF THE BOLD!

**Nantes - Saint-Nazaire**, the driving force of the Grand Ouest region just 2 hours from Paris. The metropolitan area is doing more than ever to spread its wings and invites budding Jules Vernes, entrepreneurs, visionaries and lovers of local produce and fine living to join our chosen land.



66

Nantes,  
European capital of innovation 2019

## COMPANIES ALREADY HERE INCLUDE:

GENERAL ELECTRIC - MAN - SIGMA - AIRBUS - CHANTIERS DE L'ATLANTIQUE - EOLFI - EUROFINS - SOPRA STERIA - TOTAL - CAPGEMINI ACCENTURE - DOCTOLIB - ARMOR - AIRSEAS - DAHER - VOYAGES SNCF - NAVAL GROUP - NEOLINE - BÉNÉTEAU...AND MANY MORE



**NANTES**

**No.1**  
in France for quality of life  
*l'Express - september 2019*

**2<sup>ND</sup> GREENEST CITY**  
in France  
*Observatoire des villes - february 2020*

**SAINT-NAZAIRE**

**2<sup>ND</sup> CITY**  
of less than 250,000 inhabitants  
in terms of economic attractiveness  
*Le Point - june 2019*

Population  
**800,000**  
1 million by 2030

**65,000**  
students

**€2.3 BILLION**  
of public investments  
by 2030

- 6 SECTORS OF EXCELLENCE:**
- HEALTHCARE
  - AERONAUTICAL AND SHIPBUILDING INDUSTRIES
  - OFFSHORE RENEWABLE TECHNOLOGIES
  - DIGITAL
  - CREATIVE INDUSTRIES
  - NAUTICAL



# INDUSTRY: A REGION READY TO BUILD TOMORROW

Businesses, competitiveness clusters, research institutes, leading schools and a university: a whole chain of actors is primed to rise to the demands of eco-responsible industry in the area.



## The Manifesto for Eco-Responsible Industry

How can we ensure that, together, we find better and cleaner ways of producing while serving social, societal and environmental needs? That is the challenge that Nantes and Saint-Nazaire industrialists set themselves by signing the Manifesto for Eco-Responsible Industry in June 2020. Steered by the EMC2 cluster, the Manifesto has 80 signatories (including ARMOR, Chantiers de l'Atlantique, Europe Technologies, EDF, Manitou Group, Orange, Naval Group, Daher, etc.) who want to commit to an ecological, societal and energy transition. Through this Manifesto, major companies, SMEs, microbusinesses, academic bodies and regional networks and authorities have all committed to eco-responsible processes in their activities.

### Zebra Project: IRT Jules Verne is at the heart of the transition to a circular economy

The Zebra Project (Zero Waste Blade Research) involves designing a wind turbine blade from 100% recyclable composites. Steered by IRT (Technological Research Institute) Jules Verne in partnership with industrial operators and research centres, this project aims to speed up the transition of the wind power market to a circular economy. This covers the whole spectrum, including developing materials, manufacturing, operation, dismantling and recycling wind turbine blades.

## Les Chantiers de l'Atlantique is Europe's leading shipbuilder

With orders booked until 2026 and substantial investments in marine renewable energies, recruitment continues to grow at Les Chantiers de l'Atlantique. They have employed increasing numbers for the last five years in addition to indirectly creating thousands of jobs with subcontractors.

**Atlantique Offshore Energy Business Unit**  
The BU is based in Saint-Nazaire and specialises in offshore building, with a special focus on MREs. It is a world leader in design, building, assembly and commissioning of highly complex ships and marine facilities..



### LES CHANTIERS DE L'ATLANTIQUE IN FIGURES

**Leading**  
shipbuilding hub in France.

**1,000**  
retail businesses.

**30,000**  
jobs in the region.

## General Electric dispatches its offshore wind turbine nacelles to the international market from Saint-Nazaire

“Thanks to the means and infrastructure deployed by the Region, the city of Saint-Nazaire and the Port, the offshore wind sector is right at home in Saint-Nazaire. The Centre Eolien (offshore wind energy visitor centre) is a natural reflection of this. A whole network of local operators (industrialists, R&D laboratories, corporate clusters, etc.) contributed to the creation of a collaborative ecosystem in order to promote our region.”

Steven Curet, Offshore Public Affairs Director, GE Renewable Energy

With headquarters in Nantes, GE Offshore Wind employs 600 people around the world. It is the only wind turbine manufacturer active in projects in Europe, Asia and the Americas. In March 2018 the company announced its plan to invest in the development of Haliade X, currently the world's most powerful wind turbine.



# ATLANTIC FRANCE : HOME TO 33% OF FRANCE'S MARINE RENEWABLE ENERGY JOBS

A pioneer in the development of renewable marine energies, Nantes and Saint-Nazaire are investing in the oceans to produce the energy of the future and face the challenges of the new maritime economy.

## IN ATLANTIC FRANCE...

30

acres of port space dedicated to the MRE industry

500

collaborative projects (regional, French and European)

100

marine renewable energy companies

180

million invested local government and public entities

6 000

new students per year

20

research teams

Objective of 1000 public and private research positions in the next 5 years

€ 100

million for research and innovation invested in 2015 - 2020

30

educational and research establishments

France's 1<sup>ST</sup>

off-shore energy-producing floating wind turbine (Floatgen)

1 Gw

of offshore wind power by 2023

CLUSTERS AND COLLABORATIVE PROJECTS...

neopolia

105 companies

This network merges know-how to respond in an innovative way to the needs of the MRE market.

5 integrated solutions:

- Project development engineering
- Foundation-based or floating projects
- Support for installation at sea
- Operation & Maintenance
- System Health Monitoring



PÔLE MER BRETAGNE ATLANTIQUE

350 members

Label for the development of the blue economy and its innovative and collaborative projects.



EMC2

380 companies

Benchmark competency cluster in innovative manufacturing, dedicated to the production of advanced technologies (metal and complex composites assemblies)



PASCA

Pole of expertise and collaborative platform developing the competitiveness of supply chain logistics and businesses in Pays de la Loire

And... 14 Working Groups focussing on; technology, human-centred development, CSR and pooling of resources

# THE LOIRE ESTUARY, A SHOWCASE FOR THE MARITIME ECONOMY OF THE FUTURE

## SEM-REV offshore test sites

Lying off the coast of Le Croisic and managed by the École Centrale Nantes, this is the 1<sup>st</sup> European site for multi-technology offshore testing that is connected to the grid. With support from the Foresea European project and its 11 million euro fund, the facility allows for the opportunity to select and test new technologies offshore through tenders. It hosts France's 1<sup>st</sup> floating wind turbine-Floatgen.

## Le Carnet, an industrial port site for eco-technology

This 90ha estate is one of the "turnkey" industrial sites selected by the French government. This is a site suitable for industrial activities and for which town planning, preventive archaeology and environmental formalities have already been completed, making it available to be used immediately or in the very short term.

### Technocampus Smart Factory



Saint-Nazaire

The Loire

## 1<sup>st</sup> offshore wind farm in France

In 2022, 80 wind turbines will be installed off the coast of Saint-Nazaire and will produce the equivalent of 20% of the amount of energy consumed in Loire-Atlantique.

## Yeu and Noirmoutier islands offshore wind farm

The installation of 62 wind turbines with a combined total capacity of 496MW is planned by 2023.



## Le Brick: Landmark building on the bank of the Loire

Located 2km from the historic centre of Nantes, in the heart of the legendary Bas-Chantenay quarter, Le Brick has been chosen to become a maritime and nautical hub of excellence by 2022. The building will host operators from the sector in a hybrid innovation centre featuring industrial workshops, offices and meeting spaces.



## The École Centrale Nantes is a European leader for MRE research and innovation

Its CNRS-accredited laboratories boast unique testing facilities. Its platforms include a wave basin that is highly sought after by Europe's MRE sector.

10 km

NANTES



- **Technocampuses**  
Collaborative technological platforms for boosting R&D projects:  
**Ocean Technocampus:** metal processes and offshore structures  
**Smart Factory Technocampus:** virtual reality industrial centre  
**Composites Technocampus:** materials implementation and assembly
- **Other infrastructure and testing sites**  
**Université Gustave Eiffel:** formerly IFSTTAR / Geothermal centrifuge  
**CEA Tech:** Speeding up innovation for the industry  
**CETIM:** Mechanical expertise centre  
**CSTB:** Construction Technical and Scientific Centre/Climatic Wind Tunnel



# FRANCE'S FIRST WIND FARM IS BEING BUILT IN SAINT-NAZAIRE!

The construction of France's 1<sup>st</sup> offshore wind farm began in Saint-Nazaire in 2019, with commissioning scheduled for 2022. The project involves 80 wind turbines lying between 12 and 20km off the coast of Loire-Atlantique.



## A project providing new jobs and businesses

More than **200 companies** are involved in the project, generating **1,000 jobs** for the building of the wind farm and another 100 to maintain it. To facilitate pre-assembly of the wind turbines, the Port of Nantes-Saint-Nazaire has created **an XXL logistics hub**. Since 2018, Haliade-type wind turbine parts have been transiting through here to be assembled by companies on the Saint-Nazaire offshore wind farm.

### Yeu and Noirmoutier islands wind farm, the 2<sup>nd</sup> project rallying the region's operators

Chosen following the government's second call for offshore wind projects, the farm will feature **62 wind turbines** across a surface area of **83km<sup>2</sup>**. By **2023** the wind farm should meet the annual consumption needs of some **790,000 people**, more than the whole population of the Vendée, where the islands are located.

# TRAINING TALENTS BASED ON THE INDUSTRY'S NEEDS

The region offers training to suit the needs of industrialists in the MRE sector across the whole value chain: engineering, construction, mechanics, materials, installation, connection, operation, maintenance and more.



**6,000**  
students in the Pays de la Loire area

## Centrale Nantes

This college prepares its students for the technologies and issues of the future. It has a R&D centre that explores industrial applications and it contributes to the economic development of the region and supports innovative projects:

- **5** CNRS-accredited research laboratories
- **22** partner companies / **250** industrial operators
- **1,950** students/ **11,000** graduates
- **Degrees:** Master's degree on composite materials, Master's on marine renewable energies, Master's in Marine Technology – Hydrodynamics for Ocean Engineering

### A new master's degree on "Driving energy transition"

Set up in 2019 by Audencia, Centrale Nantes, the Nantes National School of Architecture and the Ecole de Design, this degree is intended to support companies' eco-responsible processes.



## Other colleges

- **University of Nantes:** (including IUT Saint-Nazaire and Polytech): 12 laboratories involved, 16 degrees from undergraduate to postgraduate, 20 researchers engaged
- **IMT Atlantique (School of Mines):** Master's in management and engineering, Airbus Innovation Lab
- **ENSM:** National Maritime Academy of France
- **ICAM (Engineering college):** Master's in Eco-Innovation and New Energy Technologies
- **IFREMER:** National Institute of Ocean Science
- **GEPEA:** Laboratory of Process Engineering for the Environment and Food (University/IMT Atlantique /Oniris)

# LOCAL COLLABORATION BETWEEN RESEARCH AND MRE DEVELOPMENT

The **WEAMEC network** connects all Research, Innovation and Education operators in the MRE ecosystem in the Loire region:

- **20** training modules
- **30** institutions.
- **60** companies from the Loire
- **60** French and international companies
- **500** regional, national and European projects
- **300** engineers

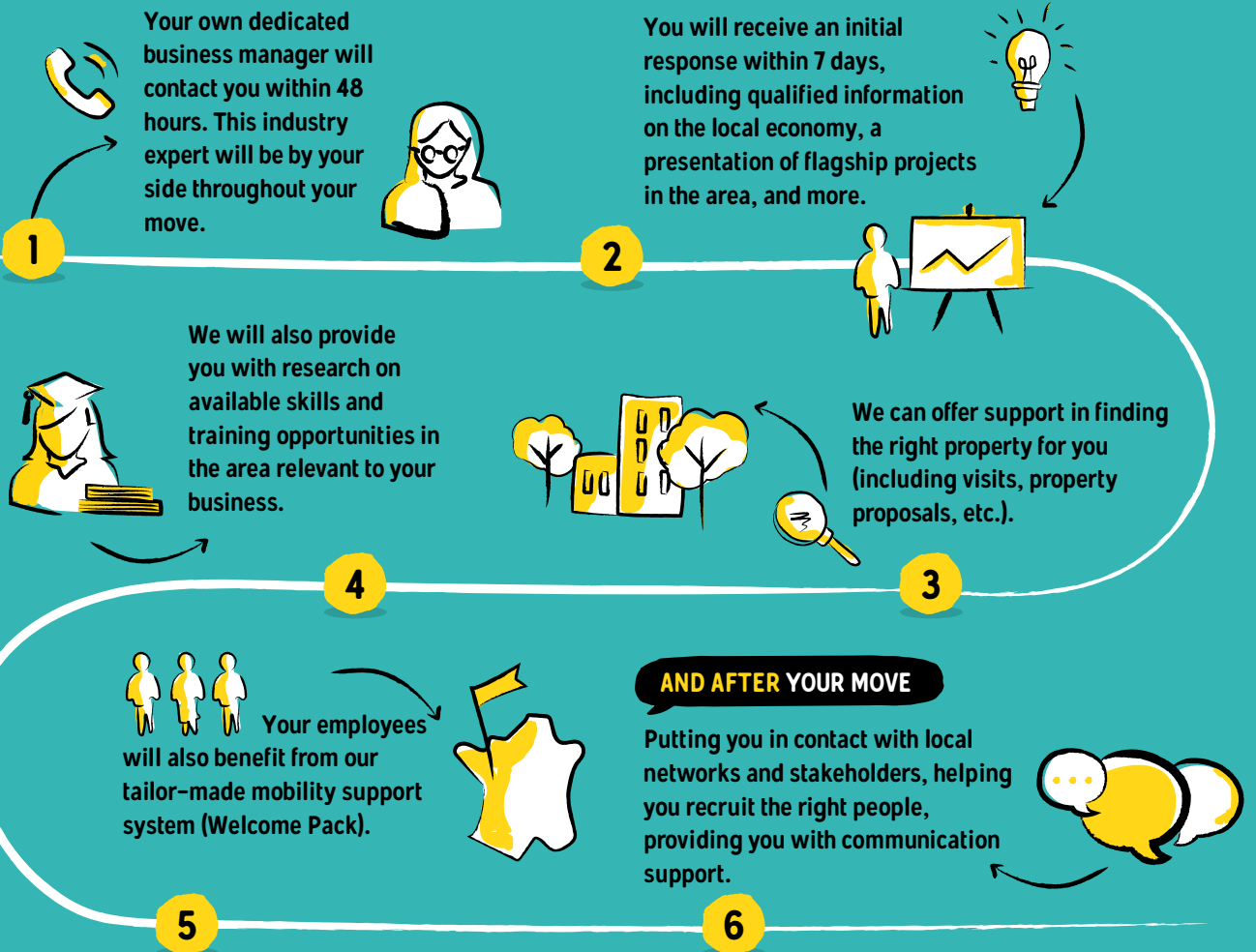
### Major companies' R&D teams

Here, new innovation projects are developed to cater to industrialists' needs. The R&D teams of GE, Naval Energies, Atlantique Offshore Energy, and Rollix (amounting to a total of 500 engineers) have chosen to base themselves here.



# ARE YOU THINKING OF STARTING A BUSINESS IN NANTES SAINT-NAZAIRE?

## WE CAN SUPPORT YOU every step of the way:



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